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Ethnoveterinary observations and practices used in a rural community in the State of Acre, Western Amazonia, Brazil

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ABSTRACT

This study aimed to identify, register and analyze the ethnoveterinary knowledge of medicinal plants employed in rural communities of the State of Acre-Brazil. Sixty families were interviewed; the personal data and specific questions about the use of medicinal plants for the treatment of diseases that affect the animals were obtained. The results indicated 43 species of medicinal plants, distributed in 28 botanical families, highlighting Lamiaceae (1.6%), Asteraceae (11.6%), Euphorbiaceae (7%) and Myrtaceae (7%). The use-value of species per informant (UV_{is} /UV_s) shows *Mentha spicata (hortelã)* (17/0.28), – *Mormodica charantia* (melão de são Caetano) (17/0.28), *Arrabidaea chica (crajiru)* (14/0.23). - *Carica papaya* (mamão macho) (13/0.22), *Chenopodium ambrosioides (mastruz)* (11/0.18) – *Jatropha curcas* (pinhão branco) (9/0.15), *Melissa officinalis* (cidreira) (9/0.15), and *Cymbopogon citratus* (lemongrass) (9/0.15) as the most cited plants. The values of the informant consensus factor (ICF) show that the digestive category presented the highest values (0,84), followed by integument (0,83), anti-inflammatory (0,80), diverse (0,72) and respiratory (0,70). As for the parts of the plant, fresh leaves (54%) were the most cited. Regarding the preparation mode, infusion tea (74%) was the most cited. This work will serve as a database for future research in the area of study.

Keywords: Ethnoveterinary; Medicinal Plants; Amazon Region – State of Acre – Brazil.

Observações Etnoveterinaria e práticas usadas em comunidades rurais no Estado do Acre, Amazônia Ocidental, Brasil

RESUMO

A utilização de plantas medicinais por comunidades ribeirinhas da Amazônia é um hábito comum, no entanto o conhecimento etnoveterinário ainda é desconhecido em algumas regiões da Amazônia. Assim a proposta deste estudo foi identificar documentar e analisar o conhecimento etnoveterinário de espécies vegetais de uso medicinal em comunidades rurais do estado do Acre-Brasil. Foram entrevistadas 60 famílias, contendo perguntas com os dados pessoais dos entrevistados e perguntas específicas sobre a utilização de plantas medicinais para o tratamento de doenças que acometem os animais. Os resultados indicaram 43 espécies de plantas de uso medicinal, distribuídas em 28 famílias botânicas, destacando-se a Lamiaceae (33%), Asteraceae (20%), Fabaceae (12,5%) e Myrtacecae (12,5%). O valor de uso de uma espécie por informante (UV_{is}/UV_s) mostra o hortelã –*Mentha spicata* (17/0.28), melão de são Caetano – *Mormodica charnatia* (17/0.28), crajirú –*Arrabidaea chica* (14/0.23), mamão macho-*Carica papaya* (13/0.22), mastruz –*Chenopodium ambrosioides* (11/0.18), pião branco – *Jatrophacurcas* (9/0.15), cidreira- *Melissa officinalis* (9/0.15) e o capim santo- *Cymbopongon citratus* (9/0.15) como as plantas de maior indicação. Os valores dos fatores do informante consenso (IFC) mostram que a categoria digestivo apresentou os maiores valores (0,84), seguido do tegumentar (0,83), anti inflamatório (0,80), diversos (0,72) e respiratório (0,70). Quanto a parte usada da planta folha fresca (54%) foi a mais citada. Com relação a forma de preparo foi encontrado com maior prevalência o chá por infusão (74%). Este trabalho servirá como base de dados para futuras pesquisas na área de estudo.

Palavras chaves: Fitoterapia, Plantas Medicinais, Amazônia Brasileira, Animais domésticos.

Introduction

Brazil has great plant biodiversity capable of making it one of the largest forests with a significant number of species used for medicinal and therapeutic purposes. It is estimated that approximately 20% of the plants on the planet are in the Brazilian forests (SANTOS et al., 2012). Great part of them, are harvested from nature or cultivated in peridomiciliar environments for medicinal use (SIVIERO et al., 2012).

The use of medicinal plants comes from ancient civilizations, where the popular knowledge is transferred from generation to generation (GARLWTT; I RGANG, 2011). The World Health Organization defines a medicinal plant as plants that contain properties or compounds that can be used for therapeutic purposes or those that synthesize metabolites to produce useful drugs (WHO, 1998).

Ethnobotany studies the knowledge and the uses of plants for therapeutic and medicinal purposes (COSTA ; MAYMORM, 2011). According to Amorozo (1996), ethnobotany encompasses the way a social group classify plants and use them. Ethnobotanical studies can contribute to the understanding and the conservation of biological and cultural diversity. In the Amazon, phytotherapy represents the appreciation of local traditions, becoming necessary to carry out studies that report the biological diversity, interrelations, and quality of life of the existing living beings (MARTINS et al., 2013). The search for information of those populations is crucial to obtain and redeem the content of cultural aspects, often specific to each location. The knowledge on medicinal plants is often the only therapeutic resource in many communities and ethnic groups, especially, in Amazon.

The therapeutic potential observed by locals, on the use and efficacy of medicinal plants, has been arousing the interest of researchers from fields like botany, pharmacology, and phytochemistry (MACIEL et al., 2002). Since 1990 several ethnobotanical surveys from medicinal plants have been recorded in extractivist reserves (KAINER; DURUEA, 1992; MING, 1995) indigenous tribes (EHRINGHAUS, 1997) and traders of natural products (SILVA, 1997) in the state of Acre. Siviero et al. (2012) and Haverroth & Freitas (2008) reported in their research the major medicinal plants in urban backyards of Rio Branco - Acre, Brazil and its main therapeutic indications, growth habits and cultivation of the species, as well as socio-economic characteristics. Martins et al. (2013) conducted a survey on medicinal plants and their applications by healers in the city of Cruzeiro do Sul, Acre, and reported the diver-

sity of the use of plant species by local healers, as well as, the variety of applications in the prevention and the cure of diseases.

Although the ethnobotanical research is widespread in Acre state, the ethnoveterinary medicine, science that studies knowledge, techniques, methods, and practices used in healing and promoting animal health, is not well-known (BARBOSA et al., 2007). Ethnoveterinary is the science that studies the opinion and the empirical knowledge employed in the prevention and the cure of animals diseases (MATHIUS-MUNDY; MC CORKLE, 1989). Some factors such as the high cost of veterinary services and the difficulty in acquiring synthetic drugs have contributed to the interest in herbal medicine as a method of healing and prevent diseases that involve pets and farm animals (MONTEIRO et al., 2011a). Ritter et al., (2012) portray the importance of conducting studies documenting the ethnoveterinary knowledge in Amazonian communities, gathering information to select plants that may be alternatives in the treatment of animal disease contributing to the discovery of new drugs. Therefore, this study aimed to identify, register and analyze the ethnoveterinary knowledge of medicinal plants employed in rural communities of the State of Acre.

Material and Methods

Figure 1. Location of Porto Acre municipality, Acre State, Western Amazon, Brazil.

The study was conducted from May 2015 to September 2015 in the rural community of Pólo Hélio Pimenta, 19th km, Porto Acre municipality, Acre State, Amazon, Brazil. Located 52 km from the capital Rio Branco, Acre, it has 164 meters altitude, in the geographic coordinates of 9°35'16" South, 67°31'58" West. It is bordered to the north by the Amazon, to the south by the municipalities of Bujari and Rio Branco, to the east by the municipality of Rio Branco, and to the west by the municipality of Bujari.

This community was chosen because it presents great potential in medicinal plants, with a way of life centered on the use of natural resources, and easy access to them. The Ethics Committee approved this research under protocol number 69/2015.

An interview was carried out with sixty families from the community previously informed about the structured questionnaire containing questions with personal data of the interviewees and specific questions about the use of medicinal plants to treat diseases that affect animals, as well as, the parts used, the preparation method and the purpose of use.

The study was realized respecting the cultural, social, moral, ethical and religious values, as well as, the habits and customs of the community. The interviewees should live in the community. The study was conducted with individuals over 18 years. The meetings were carried out directly at the interviewee's home, where the study was explained in details.

The plant material was collected, pressed, dried and sent to the herbarium of the Federal University of Acre – UFAC to identify the species. The data collection and the plants' samples were obtained in backyards or locations nearby when indicated.

All information collected was transferred to an electronic database, systematized and processed. Later, the data were transformed into percentages and displayed as graphs and tables.

The data were tabulated in Microsoft Excel spreadsheets and analyzed using two quantitative ethnobotanical methods, informant consensus factor (ICF) and use value (UV), according to the methodology of Ritter et al. (2012).

The species were grouped into categories based on medicinal uses in diseases reported by the interviewees, to calculate the ICF. It was calculated as follows, ICF = nur - nt / nur - 1, where nur represents the number of citations in each category and nt, the number of cited species (SHARMA et al., 2012).

The UV was calculated using the formula proposed by Phillips and Gentry (1993) To calculate the use-value of a species for an informant (UV_{is}), the formula $UV_{is}=\sum U_{si}/n_{is}$ was used, where UV_{is} is the number of uses mentioned by the informant for the species and n_{is} is the number of interviews with the informant. For the present study, n_{is} =1, the number of interviews per informant. Therefore, the UV_{is} value always will be equal to the U_{si} value. To calculate the use-value of each species (UV_s), the formula $UV_s=\sum U_{si}/n$" was used, where UV_{si} is equal to use-value of a species by an informant and "n" is the total of informants. The value of "n" corresponds to the "ns" value identified by Phillips and Gentry (1993), since any interviewee can cite all species.

Results

The results indicated 43 species of medicinal plants, distributed in 28 botanical families, highlighting Lamiaceae (1.6%), Asteraceae (11.6%), Euphorbiaceae (7%) and Myrtaceae (7%). Between several therapeutic indications, plants with digestive action (23%), followed by respiratory (21.8%), anti-inflammatory (12.5%) and integument (12.5%) were highlighted among other therapeutic implications.

The use-value of species per informant (UV_{is} /UV_s) shows *Mentha spicata (mint)* (17/0.28), *Mormodica charantia* (melão de são Caetano) (17/0.28), *Arrabidaea chica (crajiru)* (14/0.23). - *Carica papaya* (mamão macho) (13/0.22), *Chenopodium ambrosioides (mastruz*) (11/0.18) – *Jatropha curcas* (pinhão branco) (9/0.15), *Melissa officinalis* (cidreira) (9/0.15), and *Cymbopogon citratus (lemongrass)* (9/0.15) as the most cited plants.

Table 1. Shows the list of plants and their respective indications, preparation method and parts used, animal species and use value.

Family	Nº Tombo	Scientific name	Common name	Part used	Mode of use	Indication	system	Citation /UV_{is}	UV_s	Species
Lamiaceae	6669	*Melissa officinali*	Cidreira	Leaf	Tea	Fever	Diverse	4	0,07	ca/hum
						Soothing	nervous	9	0,15	ca/hum
						coryza	Respiratory	5	0,08	ca/hum
Fabaceae	6673	*Copaifera* sp.	Copaíba	Bark	Tea	anthelmintic	Digestive	2	0,03	ca/fe/bov\eq/hum
				Oil	in nat ura	anti-inflammatory	anti-inflammatory	5	0,08	ca/fe/bov/eq/hum
						Repellent	Integumentary	3	0,05	ca/fe/bov/eq/hum
Poaceae	6652	*Cymbopogon ctratus*	*Cymbopogon citratus*	Leaf	Tea	coryza	Respiratory	2	0,03	ca/hum
						Soothing	Nervous	1	0,02	ca/hum
						itchy	Integumentary	1	0,02	ca
						Hair loss	Integumentary	9	0,15	ca
Rutaceae	6667	*Citrus aurantium*	Orange	Bark	tea	nausea	Digestif	4	0,07	eq/ca/hum
Bignoniaceae	6670	*Arrabidaea Chica*	Crajirú	leaf and thallus	tea	anti-inflammatory	anti-inflammatory	14	0,23	ca/hum
Amaranthaceae	6668	*Chenopodium ambrosioides*	Mastruz	leaves and thallus	tea	anthelmintic	Digestive	11	0,18	ca/ ga/ ov/su/hum
					broth	anti-inflammatory	anti-inflammatory	5	0,08	ca/ov/hum
Lamiaceae	6688	*Mentha spicata*	Mint	leaf and thallus	tea	coryza	Respiratory	5	0,08	ca/fe/hum
					in natura	Cramps	Digestive	17	0,28	ca/hum
Lamiaceae	6677	*Plectranthus amboinicius*	Malvarisco	Leaf	Tea	anti-inflammatory	anti-inflammatory	2	0,03	ca/hum
						Cough	Respiratory	5	0,08	ca/hum
Phyllanthaceae	6657	*Phyllanthus niruri*	Quebra Pedra	Leaf	Tea	kidney	Renal	3	0,05	hum
Anacardiaceae	6672	*Anarcadium occidentale* L.	Cajú	Bark	Tea	anti-inflammatory	anti-inflammatory	3	0,05	ca/ga/fe/bov/hum
				Fruit	Tea	anthelmintic	Digestive	3	0,05	ca/ga/fe/bov/hum

Cont.

Cont. **Table 1.** Shows the list of plants and their respective indications, preparation method and parts used, animal species and use value.

Family	Nº Tombo	Scientific name	Common name	Part used	Mode of use	Indication	system	Citation /UV_{is}	UV_S	Species
Piperáceae	6658	*Piper longum*	Pimenta Longa	Leaf	Tea	Soothing	Nervous	2	0,03	ca/hum
Bromeliaceae	6684	*Aloe vera*	Aloe	Fruit	in natura	Fur	Integumentary	4	0,07	ca/fe/hum
Myrtaceae	6693	*Syzigium* spp.	Jamelão /azeitona	Bark	Tea	Diarrhea	Digestive	5	0,08	ca/coelho/hum
				Bark		inflammation	anti-inflammatory	3	0,05	ca/eq/bov/hum
Anacardiaceae	6666	*Mangifera indica*	Mango	Leaf	Tea	Diabetis	Endocrine system	2	0,03	hum
						Cough	Respiratory	2	0,03	ca/hum
Rutaceae	6692	*Citrus reticulata*	Tangerine	Leaf	Tea	High Blood Pressure	Circulatory	2	0,03	hum
Lamiaceae	6663	*Tanacetum vulgari*	Catinga de Mulata	Leaf	Tea	otitis	hearing	6	0,1	ca/fe/hum
Asteraceae	6662	*Tagetes erecta* L.	Cravo de defunto	Flower	Tea	Aden; fever	Diverse	3	0,05	hum
Malpighiaceae	6665	*Malpighia emarginata*	Acerola	Leaf	in natura	coryza	Respiratory	3	0,05	hum
Euphorbiaceae	6661	*Jatropha curcas* L.	Pinhão branco	Fruit	Powder	Anthelmintic	Digestive	9	0,15	ca/ov/eq/hum
Asteraceae	6653	*Peumus boldus* Molina	Boldo	Leaf	Tea	nausea	Digestive	4	0,07	ca/ga/hum
Lamiaceae	6678	*Ocimum gratissimum*	Alfavaca	Leaf	Tea	Cough	Respiratory	2	0,03	ca/hum
						relaxing	Muscular	5	0,08	ca/hum
Crassulaceae	6656	*Kalanchoe pinnata*	Corama	Leaf	Tea	Cough	Respiratory	5	0,08	ca/hum
						Anemia	hematopoietic	3	0,05	ca/hum
Asteraceae	6690	*Acmella oleracea*	Jambu	leaf and flower	Tea	Cough	Respiratory	2	0,03	ca/ga/hum
Brassicaceae	6655	*Brassica oleracea*	Couve	Leaf	Juice	Anemia	hematopoietic	1	0,02	ca
					Tea	Fever	Diverse	1	0,02	hum
Punicaceae	6675	*Punica granatum* L.	Romã	Seed	Tea	anti-inflammatory	anti-inflammatory	1	0,02	hum
Asteraceae	6659	*Achyrocline satureioides*	Macela	Leaf	Tea	nausea	Digestive	1	0,02	hum
Lamiaceae	6676	*Mentha* sp.	Menta	Leaf	Tea	Cough	Respiratory	1	0,02	hum
Cucumber family	6654	*Mormodica charantia* L.	Melão Caetano	Branch	Bath	Itch	Integumentary	17	0,28	ca/ga/fe/hum
Poaceae	6689	*Cymbopogum winterianus*	Citronela	Leaf	Macerated	Repellent	Integumentary	2	0,03	ca/fe/hum
Lamiaceae	6683	*Justicia pectoralis*	Melhoral	Leaf	Tea	intestinal disorders	Digestive	3	0,05	ca/fe
Lamiaceae	6687	*Bidens pilosa*	Picão	Leaf	Tea	Hepatitis, Kidney	Hepatic and Renal		0,07	ca/hum
Zingiberaceae	6691	*Zingiber officinalis*	Gengibre	Potato	Tea	pharyngitis	Respiratory	1	0,02	ca/hum
Fabaceae	6685	*Hymenaea stilbocarpa*	Jatobá	Bark	tea	pharyngitis	Respiratory	3	0,05	ca/hum
Meliaceae	6421	*Carapa guianensis* Aubl	Andiroba	Oil	in natura	anti-inflammatory	anti-inflammatory	4	0,07	ca/fe/su/ov/eq/bov/hum
						Repellent	Integumentary	4	0,07	ca/fe/su/ov/eq/bov/hum
Asteraceae	6681	*Vernonia polisphaera*	Assa peixe	Leaf	Macerated	bleeding	Crculatory	2	0,03	ca/eq/sui/hum
					tea	bronchitis	Respiratory	3	0,05	ca/eq/sui/hum
Malvaceae	6660	*Gossypium hirsutum* L.	Cotton	Leaf	Tea	vision	Ocular	3	0,05	ca/hum
					powder	healing	Integumentary	4	0,07	ca/fe/eq/hum
Caricaceae	6679	*Carica papaya*	Mamão macho	Flower	Tea	anthelmintic	Digestive	13	0,22	ca/fe/ov/hum
Myrtaceae	6664	*Psidium guajava*	Guava	Flower	Tea	diarrhea	Digestive	5	0,08	ca/fe/hum
Fabaceae	6686	*Senna alexandrina* Miller	Sena	Leaf	Tea	Anthelmintic	Digestive	3	0,05	ca/hum
						urinary infection	Renal	6	0,1	ca/fe/hum
Rubiaceae	6422	*Uncaria tomentosa*	Unha de gato	Branch	Tea	Fever	Diverse	3	0,05	ca/fe/hum
						nausea	Digestive	6	0,1	ca/fe/eq/hum
Alismataceaea	6682	*Echinidorus grandiflorus*	Chapéu de Couro	Leaf	Tea	urinary infection	Renal	4	0,07	hum
Euphorbiaceae	6651	*Ricinus communis*	Mamona	Oil	in natura	Anthelmintic	Digestive	3	0,05	ca/hum
Myrtaceae	6680	*Eucalyptus saligna*	Eucalyptus	Leaf	Tea	Cough	Respiratory	6	0,1	ca/fe/hum

Uv_s (specie use-value per informant), Uv_s (use-value of each species), ca (canine), fe (feline), su (swine), eq (equine), bov (bovine), ga (chicken), ov (ovine) and Hum (human).

The values of the informant consensus factor (ICF) show that the digestive category presented the highest values (0.84), followed by integument (0.83), anti-inflammatory (0.80), diverse (0.72) and respiratory (0.70). Table 2 shows the values of the informant consensus factor (ICF) per category or system. In the digestive category, problems with endoparasites (anthelmintic) stood out with the largest number of indications (46.6%) in the integument category the use as a repellent (37.5%) also stood out, respiratory cough was the main indication, and in the diverse category, kidney problems were highlighted. Table 2 shows the individual indications by category with the respective numbers of cited plant species and the number of citations per informant.

Table 2. Medicinal plants category of use and the informant consensus factor (ICF).

Medicinal use category	Species	Number of citations (nur)	ICF
Digestive	15	89	0,84
Integumentary	8	44	0,83
Anti-inflammatory	8	37	0,80
Diverse	20	70	0,72
Disease, Respiratory Tract	14	45	0,70

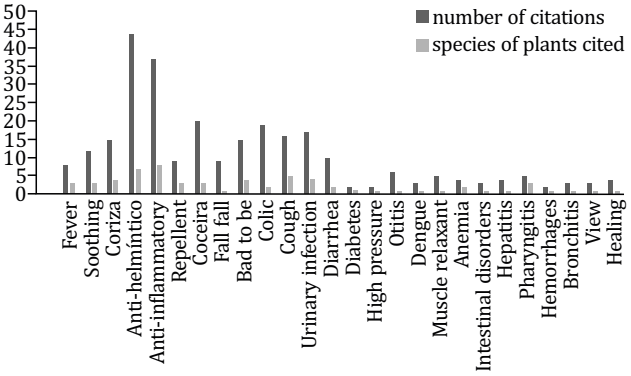

Figure 2. Total of ethnoveterinary therapeutic indications, with their respective number of citations per informant and species of plants cited.

Regarding animal species, dogs and cats were the most reported. These results regard the fact that, dogs and cats are closer to their owners.

As for the part of the plant used in the treatment of animal diseases, fresh leaf (54%) was the most cited, followed by bark (12%), flower (8%), oil (6%), fruit (6%), thallus (6%), branch (4%), and seed and potato (2%). Also, it was found that different parts of a species can be employed in different ways to the same disease (table 1).

Regarding the type of preparation or application method, infusion tea (74%), which consists in submerging a part of the plant in water soon after boiling, was the most significant, followed by *in natura* (12%), macerated (4 %), powder (4%), juice (2%), broth (2%) and bath (2%).

The interviewees are all rural producers, native from the city of Porto Acre / Acre with an indigenous or Northeastern origin. The interviewee's age was, in descending order, 50-69 years (35%), 30-49 years (33%), 19-29 (20%) and over 70 years (10%). Regarding the sex of the interviewees, 50% were men and 50% women. On the other hand, the educational level ranged from illiterate (25%), elementary school (48%), high school (20%) and higher education (6.6%). Regarding religiosity, 38% declared to be Catholic and 62% Evangelicals.

All informants reported making use of medicinal plants in treating diseases, 87% cultivate in their yards and gardens, the others, seek these plants in neighbors or relatives. Of all the interviewees, 93% reported using medicinal plants to treat diseases in their animals, 7% reported not to treat.

Discussion

The Lamiaceae and Asteraceae families are the most common in the state of Acre, Brazil (SIVIERO et al., 2012; MARTINS et al., 2013).

The plants mentioned by the interviewees present one or more therapeutic indication. Plants with anthelmintic action were the most highlighted in number of indications per informant, probably because it is a common disease in domestic animals, and easy to diagnose once the symptoms, such as diarrhea abdominal pain, vomit, and anorexia, are easy to observe (RITTER et al., 2012).

Plants with anti-inflammatory action stood out with a large number of species cited.

Of the 43 medicinal plants identified, 26 different medicinal uses were mentioned, grouped into five categories (digestive, integumentary, anti-inflammatory, respiratory and diverse). The category "diverse" covers multi-symptoms (such as fever, hemorrhage, and anemia) and undetermined categories and those indications where fewer citations were obtained by the informants, as well as, the number of species mentioned.

The use-value (UV) of a species per informant shows a direct correlation with the informant consensus factor (ICF) where the species most frequently mentioned per informant are grouped into most indicated categories, i.e., the digestive and integument categories. The most indicated species such as *Mentha spicata*, *Arrabidaea chica*, *Chenopodium ambrosioides*, and *Melissa officinalis,* were also reported by Malik et al., (2013) as medicinal plants frequently used by the healers Cruzeiro do Sul municipality, Acre-Brazil.

These species with a higher use-value already have a proven scientific knowledge regarding their phytochemical composition and their pharmacological activities, the fruits, leaves, and roots of *Mormodica charantia* are used for diabetes, as a cicatrizing, for endo (CORDEIRO et al., 2010) and ectoparasites, and cramps. Phytochemical studies have been demonstrating biologically active compounds such as the cucurbitacin glycosides and cucurbitane (CHEN et al., 2008). *Jatropha curcas* presents secondary metabolic compounds such as tannins, catechins, and triterpenes, presenting anthelmintic (MONTEIRO et al., 2011), purgative (MCGAW; ELOFF, 2010) and molluscicidal (GUBITZ et al., 1999) action. *Melissa officinalis* popularly known as "erva cidreira" has been mentioned by its several properties, such as, antibacterial (NASCIMENTO et al.,2000), antioxidant (DASTMALCHI et al., 2008), in the treatment of gastrointestinal diseases (VOGL et al., 2013), as soothing (KENNEDY, 2004), as a potent inhibitor of GABA transaminase, which explains its anxiolytic effect and was identified as rosmarinic acid (AWAD et al., 2009); as a bioactive substance acts as a repellent (KIM et al., 2005), and in the mental performance by acting on muscarinic and nicotinic acetylcholine receptors (KENNED et al., 2003, CHAIYANA;OKONOGI, 2012). Their main secondary metabolic compounds are eugenol, tannins, and terpenes. *Cymbopogon citratus* known as "capim santo" has been demonstrating an anthelmintic effect in the control of gastrointestinal nematodes on small ruminants, where has been observed the presence of tannins, saponins, and flavonoids (MACEDO et al., 2015), antifebrile in stomach problems, and tranquilizers (ARHOGHRO et al., 2012). The flavonoids as secondary metabolic in *Arrabidaea chica*, are the possible cause of its anti-inflammatory and anti-tumor activity (MICHEL et al., 2015). *Carica papaya* has anthelmintic properties such as, cysteine proteinase, popularly known as papain, which provided 97% efficacy against *Tricuris suis* infections in swine (LEVECKE et al., 2014). It has also been observed a potent effect on *in vivo* nematodes of abomasum such as *Haemonchus contortus,* in small ruminants (BUTTLE et al., 2011). *Mentha spicata* has bioactive substances such as carvone, a monoterpene ketone with antispasmodic (SOUZA et al., 2013), analgesic (GONSALVES et al., 2008) and antifungal (ADAM et al., 1998) action.

In the preparation of medicinal drugs, the leaves are the most common part used, since the plants are not stored or bought, they are harvested directly from the backyards. Ritter et al. (2012) and Monteiro et al. (2011b) found similar results, once they observed a higher frequency in using leaves, bark, and roots as the main part of the plants, used in Ethnoveterinary research in eastern Amazon. It is important to distinguish the vegetal part to be used, since the active principles are distributed by the different parts of the plant, being possible to find lethal substances in some parts (PINTO et al., 2000). The way of preparing a plant with medicinal purposes is extremely important for the chemicals responsible for their pharmacological effects be properly removed from the plant cell without changing its chemical properties (PINTO et al., 2000).

Regarding the interviewees, there is a strong relationship between the age and knowledge of medicinal plants. Many researchers believe that older interviewees have greater knowledge about medicinal plants since they have more free time to cultivate and manage their yards (CARNIELLO et al., 2010; AMARAL; GUARIM NETO, 2008). On the other hand, the knowledge about medicinal plants tends to decrease with the level of schooling; this is also because of the migration of young people to the big cities seeking better education and employment. It was observed that Evangelicals interviewees stood out from the Catholics, this is related to a large number of evangelical churches in rural communities. According to Camargo (1998), there is a relationship between popular medicine and religious beliefs. Martins et al. (2013) also noted the influence of religion on practices and knowledge of medicinal plants in curing diseases.

Of all the interviewees, 93% reported using medicinal plants to treat diseases in their animals, 7% reported not to treat. According to Andrade et al. (2012) the key factor is the insecurity of using it in the treatments. The lack of information on the use of herbal medicines and research on the effectiveness of medicinal plants in diseases that affect animals is a great obstacle; thus it requires further studies in this field to confirm and identify the active principles responsible by herbal actions. Therefore, human health care should be as important as adequate treatment for domestic and farm animals, thus ensuring quality and safe food for human consumption (GALDINO et al., 2001).

Conclusion

From 43 species, *Mentha spicata (hortelã)*, *Mormodica charantia (melão de são caetano)*, *Arrabidaea chica (crajiru)*, *Carica papaya (mamão macho)*, *Chenopodium ambrosioides (mastruz)*, *Jatropha curcas (pinhão branco)*, *Melissa officinalis (cidreira)*, and *Cymbopogon citratus (capim santo)* presented the higher use-values by informant, and the digestive category, followed by integument and anti-inflammatory were the most indicated by the informant consensus factor. The fresh leaves were the part most used, and tea infusion was the preparation method most employed.

The rural community Pólo Hélio Pimenta, far 19 km from the city of Porto Acre - Acre / AC, Amazon region of Brazil, has been using medicinal plants in the treatment of diseases that affect domestic animals; contributing to ethnoveterinary practices, thus stimulating the interest of the scientific community to confirm and validate the great diversity of medicinal plants and the variety of applications in the prevention and the cure of domestic animal diseases.

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